

1 Figure 1 shows a scanning electron micro graph of micro-machined  
 2 vibratory ring gyroscope having freely suspended tracks  
 3 schematically shown thereon;  
 4

5 Figure 2 shows a cross section through a channel between two  
 6 portions of a material wherein the top portion of the channel has  
 7 been sealed;

8 *Figures 3a-3d*  
 9 ~~Figure 3~~ schematically shows a process for fabricating a freely  
 10 suspended track;

11 *Figures 4a-4d*  
 12 ~~Figure 4~~ schematically shows a further process flow for forming a  
 13 freely suspended track; and  
 14

15 Figures 5 to 9 show schematically further embodiments of the  
 invention.

16 *not AS*  
 The gyroscope 2 of Figure 1 comprises a number of channels (for example  
 those referenced 4 and 6) etched into a surface portion of a substrate 8,  
 20 which in this case is a silicon wafer. A ring 10 has also been fabricated  
 into the silicon and is substantially freely suspended in the bulk of the  
 substrate 8. The ring is a device suspended portion substantially free  
 from the bulk of the substrate 8 having been undercut during its formation  
 so that a bottom portion thereof is separated from the bulk of the  
 25 substrate 8. The ring 10 is maintained in place on the substrate 8 by eight  
 pairs of ligaments (a to h), which are connected to the ring 10 and to the  
 bulk of the substrate 8.

There is also a comb resonator 12 provided in association with the  
 30 gyroscope containing both channels and device suspended portions 14.

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